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| Terms   | Documents |
|---|-----------|
| L12 and (lens sheet) same light\$3 same emit\$3 same fac\$3 same oppos\$3 same light\$3 same (guid\$3 or plate) | 0         |

Database:

US Patents Full-Text Database  
US Pre-Grant Publication Full-Text Database  
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Search:

L12 and (lens sheet) same light\$3 same  
emit\$3

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*DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

|            |   |        |            |
|------------|---|--------|------------|
| <u>L14</u> | L12 and (lens sheet) same light\$3 same emit\$3 same fac\$3 same oppos\$3 same light\$3 same (guid\$3 or plate) | 0      | <u>L14</u> |
| <u>L13</u> | L12 and (light guid\$3)   | 3      | <u>L13</u> |
| <u>L12</u> | L1 and l2   | 280    | <u>L12</u> |
| <u>L11</u> | L1 and (light guid\$3) same panel same (transparent or luminescent or translucent) same material                | 0      | <u>L11</u> |
| <u>L10</u> | L1 and light same emit\$3 same face same (oppos\$3 or adjacent\$2) same first same side                         | 1      | <u>L10</u> |
| <u>L9</u>  | L8  | 2      | <u>L9</u>  |
| <u>L8</u>  | l1 and l2 and l4  | 2      | <u>L8</u>  |
| <u>L7</u>  | L5 and light same emit\$3 same face same (oppos\$3 or adjacent\$2) same first same side                         | 0      | <u>L7</u>  |
| <u>L6</u>  | L5 and light same emit\$3 same face same oppos\$3 or adjacent\$2 same first same side                           | 150254 | <u>L6</u>  |
| <u>L5</u>  | L4 and (lens sheet or prism\$) same (separat\$3 or divid\$3)  | 15     | <u>L5</u>  |
| <u>L4</u>  | L2 and (light guid\$3) same panel   | 59     | <u>L4</u>  |
| <u>L3</u>  | L2 and (light guid\$3) same panel same (transparent or luminescent or translucent) same material                | 3      | <u>L3</u>  |
| <u>L2</u>  | (touch panel)   | 11073  | <u>L2</u>  |
| <u>L1</u>  | (345/175 OR 345/176 OR 178/18.09 OR 178/19.05 OR 178/18.1 OR 345/173).CCLS.                                     | 1498   | <u>L1</u>  |

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 15 of 15 returned.**☐ 1. Document ID: US 6333520 B1

L5: Entry 1 of 15

File: USPT

Dec 25, 2001

US-PAT-NO: 6333520

DOCUMENT-IDENTIFIER: US 6333520 B1

TITLE: Thin film transistor, manufacturing method thereof, and circuit and liquid crystal display device using the thin film transistor

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|
| Draw Desc | Image |          |       |        |                |      |           |           |             |        |     |

☐ 2. Document ID: US 6307532 B1

L5: Entry 2 of 15

File: USPT

Oct 23, 2001

US-PAT-NO: 6307532

DOCUMENT-IDENTIFIER: US 6307532 B1

TITLE: Liquid crystal apparatus, driving method thereof, and projection-type display apparatus and electronic equipment using the same

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KMC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|--------|-----|
| Draw Desc | Image |          |       |        |                |      |           |           |             |        |     |

☐ 3. Document ID: US 6297792 B1

L5: Entry 3 of 15

File: USPT

Oct 2, 2001

US-PAT-NO: 6297792

DOCUMENT-IDENTIFIER: US 6297792 B1

TITLE: Apparatus for driving liquid crystal display panel, liquid crystal display apparatus, electronic apparatus, and method of driving liquid crystal display panel

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KMC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|-----|
| Draw Desc | Image |          |       |        |                |      |           |           |             |     |

☐ 4. Document ID: US 6281700 B1

L5: Entry 4 of 15

File: USPT

Aug 28, 2001

US-PAT-NO: 6281700

DOCUMENT-IDENTIFIER: US 6281700 B1

TITLE: Active matrix substrate inspecting method, active matrix substrate, liquid crystal device, and electronic apparatus

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |      |

☐ 5. Document ID: US 6275273 B1

L5: Entry 5 of 15

File: USPT

Aug 14, 2001

US-PAT-NO: 6275273

DOCUMENT-IDENTIFIER: US 6275273 B1

TITLE: Active matrix liquid crystal display device having a black matrix and protective film in self alignment

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |      |

☐ 6. Document ID: US 6266039 B1

L5: Entry 6 of 15

File: USPT

Jul 24, 2001

US-PAT-NO: 6266039

DOCUMENT-IDENTIFIER: US 6266039 B1

TITLE: Liquid crystal device, method for driving the same, and projection display and electronic equipment made using the same

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |      |

☐ 7. Document ID: US 6225990 B1

L5: Entry 7 of 15

File: USPT

May 1, 2001

US-PAT-NO: 6225990

DOCUMENT-IDENTIFIER: US 6225990 B1

TITLE: Method of driving display apparatus, display apparatus, and electronic apparatus using the same

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |      |

☐ 8. Document ID: US 6181310 B1

L5: Entry 8 of 15

File: USPT

Jan 30, 2001

US-PAT-NO: 6181310

DOCUMENT-IDENTIFIER: US 6181310 B1

TITLE: Driving method of liquid crystal apparatus

|           |       |          |       |        |                |      |           |           |             |     |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|-----|
| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KMC |
| Draw Desc | Image |          |       |        |                |      |           |           |             |     |

☐ 9. Document ID: US 6146928 A

L5: Entry 9 of 15

File: USPT

Nov 14, 2000

US-PAT-NO: 6146928

DOCUMENT-IDENTIFIER: US 6146928 A

TITLE: Method for manufacturing thin film transistor, liquid crystal display and electronic device both produced by the method

|           |       |          |       |        |                |      |           |           |             |     |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|-----|
| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KMC |
| Draw Desc | Image |          |       |        |                |      |           |           |             |     |

☐ 10. Document ID: US 6144354 A

L5: Entry 10 of 15

File: USPT

Nov 7, 2000

US-PAT-NO: 6144354

DOCUMENT-IDENTIFIER: US 6144354 A

TITLE: Image display apparatus

|           |       |          |       |        |                |      |           |           |             |     |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|-----|
| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KMC |
| Draw Desc | Image |          |       |        |                |      |           |           |             |     |

☐ 11. Document ID: US 6136632 A

L5: Entry 11 of 15

File: USPT

Oct 24, 2000

US-PAT-NO: 6136632

DOCUMENT-IDENTIFIER: US 6136632 A

TITLE: Active matrix substrate, method of producing an active matrix substrate, liquid crystal display device, and electronic equipment

|           |       |          |       |        |                |      |           |           |             |     |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|-----|
| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KMC |
| Draw Desc | Image |          |       |        |                |      |           |           |             |     |

☐ 12. Document ID: US 6084248 A

L5: Entry 12 of 15

File: USPT

Jul 4, 2000

US-PAT-NO: 6084248

DOCUMENT-IDENTIFIER: US 6084248 A

TITLE: Thin film transistor, manufacturing method thereof, and circuit and liquid crystal display device using the thin film transistor

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |

KMC

☐ 13. Document ID: US 6011533 A

L5: Entry 13 of 15

File: USPT

Jan 4, 2000

US-PAT-NO: 6011533

DOCUMENT-IDENTIFIER: US 6011533 A

TITLE: Image display device, image display method and display drive device, together with electronic equipment using the same

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |

KMC

☐ 14. Document ID: US 6002463 A

L5: Entry 14 of 15

File: USPT

Dec 14, 1999

US-PAT-NO: 6002463

DOCUMENT-IDENTIFIER: US 6002463 A

TITLE: Liquid crystal device having a light blocking layer provided over an alignment layer, method for making the same

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |

KMC

☐ 15. Document ID: US 5989945 A

L5: Entry 15 of 15

File: USPT

Nov 23, 1999

US-PAT-NO: 5989945

DOCUMENT-IDENTIFIER: US 5989945 A

TITLE: Thin film device provided with coating film, liquid crystal panel and electronic device, and method for making the thin film device

| Full      | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments |
|-----------|-------|----------|-------|--------|----------------|------|-----------|-----------|-------------|
| Draw Desc | Image |          |       |        |                |      |           |           |             |

KMC

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| Terms  | Documents |
|--|-----------|
| L4 and (lens sheet or prism\$) same (separat\$3 or divid\$3) | 15        |

Display Format: CIT

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**WEST****End of Result Set**

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L10: Entry 1 of 1

File: USPT

Jun 4, 1985

DOCUMENT-IDENTIFIER: US 4521870 A

TITLE: Audio/video system having touch responsive function display screen

Detailed Description Paragraph Right (3):

In accordance with the invention a superior and highly advantageous human interface with the editing system 10 is provided by the touchscreen data monitor 14. As shown in detail in FIG. 2, the touchscreen data monitor 14 is comprised of a cathode ray tube 26 having a display screen 28 at the front thereof. Mounted adjacent the display screen 28 is a touch input system 30. The touch input system 30 establishes a pattern of interruptable beams across the face of the display screen 28 using light emitting diodes and photodetectors. In the present example the touch input system 30 is of the type manufactured by Carroll Manufacturing Company of Champaign, Ill. and includes two different pluralities of light emitting diodes 32 and 34 on the left side and bottom of the display screen 28 respectively. The touch input system 30 also includes a first plurality of photodetectors 36 on the right-hand side of the display screen 28 opposite the light emitting diodes 32 and a second plurality of photodetectors 38 along the top of the display screen 28 and opposite the light emitting diodes 34. The light emitting diodes 32 emit infrared rays which extend in generally parallel fashion across the face of the display screen 28 to the photodetectors 36. Each one of the light emitting diodes 32 corresponds with a particular one of the photodetectors 36 so that the infrared ray from the light emitting diode falls upon the photodetector. In like fashion the light emitting diodes 34 emit infrared rays which extend upwardly along the face of the display screen 28 in generally parallel fashion to the photodetectors 38.

Current US Cross Reference Classification (3):345/173Current US Cross Reference Classification (4):345/175



**WEST****End of Result Set**

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L3: Entry 3 of 3

File: DWPI

Jun 23, 2000

DERWENT-ACC-NO: 2000-501110

DERWENT-WEEK: 200045

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TITLE: Touch panel of electroluminescent display device, radiates light to adjacent sides of transparent material made light guide plate, which then progress to sensor arrays provided on other two adjacent sides of plate

Basic Abstract Text:

ADVANTAGE - Since the touch panel does not have electronic wiring in its input portion, the panel is strong against shock. Since the light is irradiated within light guide plate after radiating light from illumination unit, input position can be detected with high precision.

Basic Abstract Text:

DESCRIPTION OF DRAWING(S) - The figure shows the top elevation view and sectional view of touch panel.

Standard Title Terms:

TOUCH PANEL ELECTROLUMINESCENT DISPLAY DEVICE RADIATE LIGHT ADJACENT SIDE TRANSPARENT MATERIAL MADE LIGHT GUIDE PLATE PROGRESS SENSE ARRAY TWO ADJACENT SIDE PLATE

Title (1):

Touch panel of electroluminescent display device, radiates light to adjacent sides of transparent material made light guide plate, which then progress to sensor arrays provided on other two adjacent sides of plate

Basic Abstract Text (3):

ADVANTAGE - Since the touch panel does not have electronic wiring in its input portion, the panel is strong against shock. Since the light is irradiated within light guide plate after radiating light from illumination unit, input position can be detected with high precision.

Basic Abstract Text (4):

DESCRIPTION OF DRAWING(S) - The figure shows the top elevation view and sectional view of touch panel.

Standard Title Terms (1):

TOUCH PANEL ELECTROLUMINESCENT DISPLAY DEVICE RADIATE LIGHT ADJACENT SIDE TRANSPARENT MATERIAL MADE LIGHT GUIDE PLATE PROGRESS SENSE ARRAY TWO ADJACENT SIDE PLATE

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号  
特開2000-172444  
(P2000-172444A)

(43) 公開日 平成12年6月23日 (2000. 6. 23)

| (51) Int.Cl. <sup>7</sup> | 識別記号  | F I           | テーマコード* (参考) |
|---------------------------|-------|---------------|--------------|
| G 0 6 F 3/033             | 3 6 0 | G 0 6 F 3/033 | 3 6 0 E      |
| 3/03                      | 3 3 0 | 3/03          | 3 3 0 Z      |

審査請求 未請求 請求項の数12 O L (全 9 頁)

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(32) 優先日 平成10年10月2日 (1998. 10. 2)

(33) 優先権主張国 日本 (J P)

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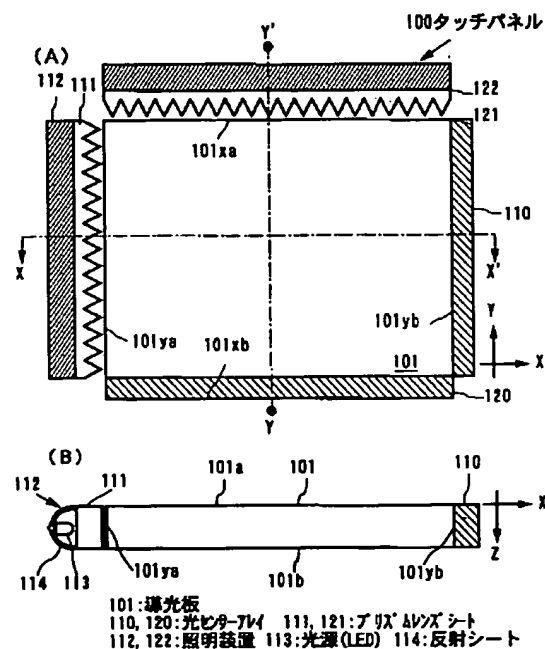
神奈川県厚木市長谷398番地 株式会社半  
導体エネルギー研究所内

(54) 【発明の名称】 タッチパネル及びタッチパネルを備えた表示装置及び表示装置を備えた電子機器

(57) 【要約】

光センサーを用いたタッチパネルであって、機械的強度が高く簡単な構成で、入力位置を正確に検出する。

【解決手段】 照明手段112、122を出射した照明光は、プリズムレンズシート111、121のX軸方向、Y軸方向に指向性の高い光にされ、導光板101の側面101ya、101xaへ入射される。入射した光は導光板101内を全反射しながら対向する側面101yb、101xbへ進み、光センサーアレイ110、120で受光される。導光板101の表面を入力ペン又は指先で触れると、触れた位置では光が屈折又は吸収されるため、光センサーアレイの受光光量が減少する。



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L3: Entry 2 of 3

File: JPAB

Sep 22, 2000

DOCUMENT-IDENTIFIER: JP 2000259347 A  
TITLE: INFORMATION PROCESSOR

Abstract (1):

PROBLEM TO BE SOLVED: To provide an information processor of a portable information terminal or the like having a touch panel which is proof against outer light, contamination and a mechanical shock and which can precisely detect a position and having a highly precise display device for inputting precise information.

Abstract (2):

SOLUTION: An information processor is provided with a field sequential display device having a back light 102 supplying the light of three colors, a picture display part forming the picture of one frame by sequentially and time- divisionally displaying three sub-frames corresponding to the light of three colors, and with a touch panel 103 having a light guide plate formed of a translucent material, a light sensor array where a light reception face faces the side of the light guide plate, a lens sheet where an emitting face faces the side of the light guide plate facing the side and an illumination means illuminating the incident face of the lens sheet.